133 [316] Malta, and over 70 feet in western Malta. It provides the most important building stone on the islands, the 'franka', which is a very easily cut freestone which is worked in large, vertical sided quarries especially around Mqabba, Malta (5267), Sannat, Gozo (3186) and north of San Lawrenz (2891). The franka when used for exterior work weathers well. The stone develops a tough outer layer but in time this often exfoliates and weathers in a curious honeycomb manner. There are abundant fossils in this division the commonest being *Flabellipecten*, *Schizaster* and *Eupatagus*.

A ubiquitous phosphatic nodule bed, varying from a few inches to three feet in thickness, marks the upper limit of the division. Within the limestone there are other seams of phosphatic nodules of only local distribution. There are two such near Naxxar (4974) at 40 feet and 90 feet above the base. The upper phosphatic nodule bed (bed G of Cooke 1896, p. 503) yields abundant fossils including the teeth of a giant shark *Carcharodon megalodon* and of the seal *Phoca rugosidens* and also *Stereodon*, *Notidanus* and *Odontaspis*. There are also corals, *Trochacyathus* spp., pectens and echinoids.

(ii) Middle Globigerina Limestone: The white marly limestones of this division which follow above the nodule bed at the top of the Lower Globigerina Limestone are everywhere readily distinguishable from the beds below in colour and lithology. The division is absent in eastern Gozo but increases to 150 feet near Rabat, Malta, and 390 feet in Marsaxlokk Bay (5965) where the series is very well exposed. Within this rather monotonous series several minor horizons of dispersed phosphatic nodules occur locally in west and central Malta. Also khaki-hearted cherts are developed in the lower portion and these form a prominent feature inland one mile south-west of Siggiewi, Malta (4967). A widespread phosphatic nodule bed marks the upper limit of this division and below this in western Gozo is a coarse yellow limestone unit.

The sparse fauna found within the Middle Globigerina Limestone includes the typical Langhian or Burdigalian nautiloid *Aturia aturi*. Also there are the echinoids *Brissopsis* and *Schizaster* and several pectens. Of particular interest are the remains of the turtle *Tryonx melitensis* and the crocodile *Tomistoma*.

(iii) Upper Globigerina Limestone: The upper nodule bed at the top of the Middle Globigerina Limestone is followed by a return to yellow and coarser beds similar in lithology to the Lower Globigerina Limestone. This division does not show the same pattern of thickness variation as the two lower divisions. Typically it is 70-80 feet thick but expands southwards and at Delimara Point in south Malta (6064) there is at least 140 feet.

This division can be farther divided in many places into three parts: a lower, yellow, fine grained limestone, a light blue marly and argillaceous division, and an upper, fine grained yellow limestone with common pteropod casts and honeycomb weathering. When well exposed, the junction with the Blue Clay above is always clearly seen and it is difficult to understand why a contrary view is so widespread in the literature. • 317]

3. The Blue Clay

This formation, often called the 'Maltese Clays and Marls' or the 'Clays and Marls', lies conformably upon the Globigerina Limestone. It is a series of blue and yellow clays and marls, yielding selenite, up to 230 feet in thickness but at times thinning out completely. The clay is of considerable importance as a seal to the Upper Coralline Limestone and Greensand aquifer and has been used for pottery.

There has been considerable dispute as to the cause of the thinning of the Blue Clay. Murray and Cooke considered it was due to pressure of the Upper Coralline Limestone above leading to superficial 'bulging'. This is clearly a factor in most places, but in certain regions the Greensand and Upper Coralline Limestone may rest directly on the Middle and Lower Globigerina Limestone on a scale too vast to be interpreted as due either to 'bulging' or to removal by erosion of the intervening clay. In particular around San Anard (5970), two miles south-east of Valletta, the Upper Coralline Limestone transgresses northward over much of the Middle Globigerina Limestone and finally rests on the Lower Globigerina Limestone within half a mile.